

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
26 August 2004 (26.08.2004)

PCT

(10) International Publication Number
WO 2004/072088 A3

(51) International Patent Classification⁷: **C07F 9/50**,
15/00, C07C 23/04, C07B 37/00

(21) International Application Number:
PCT/JP2004/001514

(22) International Filing Date: 12 February 2004 (12.02.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2003-037399 14 February 2003 (14.02.2003) JP

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,

KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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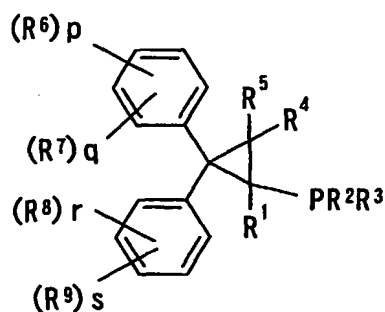
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- of inventorship (Rule 4.17(iv)) for US only

Published:

- with international search report

[Continued on next page]

(54) Title: PHOSPHINE COMPOUND, INTERMEDIATE, PALLADIUM-COMPLEX, AND USE THEREOF



(1)

(57) Abstract: Palladium-phosphine complexes obtained by reacting a 5 compound of formula (1) below with a palladium compound: (wherein R¹ is a hydrogen atom, an alkyl group, a cycloalkyl group or a phenyl group which may be substituted; R² and R³ are each, the same or different, an alkyl group, a cycloalkyl group or a phenyl group which may be substituted; R⁴ and R⁵ are each, the same or different, a hydrogen atom, an alkyl group, a cycloalkyl group or a phenyl group which may be substituted; R⁶, R⁷, R⁸ and R⁹ are each, the same or different, an alkyl group, a cycloalkyl group, a phenyl group which may be substituted, an alkoxy group, a dialkylamino group, a halogen atom, a phenyl group, a benzyl group, a naphthyl group or a halogenated alkyl

group; R⁶ and R⁷, R⁸ and R⁹ may be combined to form, each, a fused ring, a trimethylene group, a tetramethylene group or a 20 methylenedioxy group; p, q, r and s are each an integer of 0 to 5; and p + q, and r + s are each in the range of 0 to 5.), which is a novel and efficient catalyst for manufacturing various useful compounds.



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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(88) Date of publication of the international search report:
23 September 2004

INTERNATIONAL SEARCH REPORT

International Application No.
PCT/JP2004/001514

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07F9/50 C07F15/00 C07C23/04 C07B37/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07F C07C C07B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	TOPOLSKI, M. ET AL: "Chiral carbenoids: their formation and reactions" JOURNAL OF ORGANIC CHEMISTRY (1993), 58(3), 546-55, 1993, XP002279592 the whole document	11
X	WALBORSKY, H. M. ET AL: "Carbenoids. Metal assisted ionization" TETRAHEDRON LETTERS (1985), 26(23), 2743-6 1985, XP002279593 the whole document	11

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Date of the actual completion of the international search

13 May 2004

Date of mailing of the international search report

13/08/2004

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INTERNATIONAL SEARCH REPORT

International Application No.
PCT/JP2004/001514

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	BOCHE, G. ET AL: "Alternative pathways in the reactions of cyclopropyl halides with alkali metal naphthalenes" JOURNAL OF THE AMERICAN CHEMICAL SOCIETY (1980), 102(17), 5697-9 , 1980, XP002279594 the whole document	11
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INTERNATIONAL SEARCH REPORT

International Application No.
PCT/JP2004/001514

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	HAUSSER, JACK W. ET AL: "Solvolysis of cyclopropyl halides. 2-Phenylcyclopropyl chlorides" JOURNAL OF THE AMERICAN CHEMICAL SOCIETY (1967), 89(26), 6981-4 , 1967, XP002279600 the whole document ---	11
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